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ABSTRACT

For a number of years it has been suggested that distance education is a natural extension of existing teaching methods that includes learners who are separated from the instructor by time or distance. This paper takes an alternative look at distance-education research and evaluation and proposes an evaluation model built on that view. That distance education is essentially different from traditional education is made apparent by examining both methods and techniques. Methods generate techniques, and both must be distinguished from the devices (technology hardware) that are used in education. In traditional instruction the flow is from method to technique to device; in distance education, the device can affect method and technique. An evaluation framework is diagrammed that depicts the relations among device, method, technique, learner, content, and instructor. The interaction among these elements cannot be ignored during the development of distance education in the future. Three figures and two tables illustrate the framework. (Contains 7 references.) (SLD)

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A Systemic View of Distance Education Evaluation:

Finding Our Bearings

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Distance Education is a growing and developing field in a number of regards. First, it is growing in the number of people participating. Second, it is growing in the number of organizations which sponsor distance education activities. Third, it is growing in the kinds of organizations which sponsor distance education. Fouth, it is developing in sophistication of programs. And fifth, it is developing in the sophistication of methods.

To accompany these areas of growth and development a correlative area must be developed. For a number of years the idea that distance education is a natural extension of existing classes, meetings, or seminars which include learners who are separated from the instructor in either time or distance, or both have guided our activities in distance education research and evaluation. This paper suggests an alternative look at distance education research and evaluation and proposes an evaluation model built upon that alternative view.

That distance education should be recognized essentially as a different kind of endeavor from traditional face to face education has been recognized by those working and writing in the field of distance education and those working in closely related fields. For example, Garrison (1989) offers three criteria as minimum characteristics of a distance education setting. He notes that in distance education the majority of educational communication occurs noncontiguously, there will be two-way communication between teacher and student taking place, and communication will be technologically mediated.

These characteristics are provided by a distance educator and reflect the field view of distance education. Closely related to this definition is the American Association for the Advancement of Science's definition of technology (1989). "In the broadest sense, technology extends our ability to change the world: to cut, shape, or put together; to move things from one place to another; to reach further with our hands, voices, and senses" (p.39). While this definition is not about distance education *per se*, it does describe what happens in a distance education setting.

While various authors writing in the field of distance education, and those writing in closely allied fields, find common or related perspectives there remains a problem with those who look at distance education with only technology in mind. This fact is lamented by Hofmeister, Carnine, and Clark (1993) when they say "Many of the present conceptual structures surrounding technology, media, and materials are hardware-focused and detract from more potent variables, such as the content and structure of the curriculum, the supporting pedagogy, and the interaction between the teacher and the technology, media, and materials....We diminish the values of and the focus on this dissemination role when hardware is promoted with questionable claims implying unique and powerful contributions to the learning process" (p.2).

These problems can be greatly reduced if the phenomenon of distance education is conceptually viewed in a holistic manner. It is the purpose of this paper to present one such view.

An updated framework

In the early 1960's Coolie Verner proposed a conceptual scheme for classifying various components of the educational transaction. He did this because he felt that "the generally recognized confusion that characterized adult education stems from the absence of any conceptual scheme or basic theoretical structure" (p. iii), a condition which exists in distance education today. Verner's framework depends upon the precise use of two popularly confused terms: methods and techniques. To Verner they meant vastly different things and those differences can and should inform our practice of distance education.

Verner defined *method* as "the relationship established by the institution with a potential body of participants for the purpose of systematically diffusing knowledge among a prescribed by not necessarily fully identified public" (p. 9). This idea of method is limited to organizational and sociological concerns. It does not encompass the psychological construction of learning. While much effort has been directed toward

learning in our studies of DE, little has been aimed at the organization and social relationships in DE.

Technique was defined as "the relationship established by the institutional agent to facilitate learning among a particular and precisely defined body of participants in a specific situation" (p. 9). Verner's notion was that methods refer to the way in which organizations relate to groups of people and techniques are the ways people relate to information for the purpose of learning.

Methods, according to Verner, provide us with a set of techniques appropriate to given situations. Methods can be individual in nature, such as apprenticeships, correspondence study, or internships. Group methods can be classified into natural groups (such as a family or autonomous groups) or social groups (such as formal associations or work groups). Small groups, larger groups, community groups are all possible classifications.

Verner understood the place of technology hardware, or as he labeled them, "devices." This notion of devices is particularly informative and places a new light on what we term technology. Verner stated "In producing educational activities for adults numerous mechanical instruments or environmental factors may be employed to augment the processes employed. These are frequently identified by the field as methods or techniques when in reality they should be designated more precisely as devices, since they enhance the effectiveness and utility of techniques but cannot themselves function independently as techniques for the acquisition of knowledge" (p. 10).

Verner also understood any method of education was the function of the "continuing relationship for systematic learning that is established by the institution with those in the public whom it seeks to educate..." (p. 13). Then, according to this description of method, individual and institutional needs combine to determine the method. Verner implies in his writings that some techniques are method bound. Certainly, an instructional designer would not employ a group discussion technique in

a method in which learners exist in isolation (i.e. an apprenticeship). Once methods and techniques have been selected, then devices can be chosen, because devices, in and of themselves, do not teach.

The flow of the traditional instructional design process is from method to technique to device. Verner in the early 1960's could not anticipate the advent of the smart devices which exist today. Burnham and Seamons (1987) proposed "the idea that devices, especially electronic devices and systems, can affect methods or even create methods unanticipated by Verner..." (p. 10). These new methods have not received much attention from the researchers in distance education. We have been so caught-up with demonstrating that there are no statistical differences between distance education and face to face education that we seem to have forgetten the notion that we are dealing with another kind of educational setting or method.

To illustrate the differences, consider for a moment the traditional classroom method of education where students are assigned to a class or register for one. While it is true that the student-makeup of today's university classes is diverse, it is also true that the student-makeup of distance education classes is of even greater diversity. Consider for a moment the kinds of students that may be in the same distance education class: displaced homemakers, unemployed space industry workers, and inmates from the state prison. How do these people interact with one another? Another and more fundamental question is: What constitutes a classroom or learning group? Is it the total of the people at the various sites or should we consider each small receiving site as a classroom? It is important to realize that the classroom method is changed by the new devices we encounter in distance education. We are mistakenly attributing the affects in learning to the devices when we might be better advised to consider the effects of methods and techniques which are enabled or disabled by devises.

This is precisely the point made by in the Blueprint for Action (Hofmiester, et al., 1993). The advantage of using the labels with specific references to particular

areas of education means that differentiation can be made among technology (the devices), the administration of distance education (the methods), and instructional design matters or processes for facilitating learning (the techniques). Such differentiation will help avoid the problems noted by Burnham and Seamons (1987) as they described a metaphor of distance education. "The current landscape of Electronic Distance Education (EDE) is broken and confused by boulders of hardware, rivers of processes, and mountains of exhortations....Because of technological changes and improvements, the future seems encumbered with even more conceptual confusion and technological preoccupations than is presently the case" (p.8). The comments of the AAAS 2061 project staff would indicate that the statement was prophetic to some degree.

A distance education system can be simply represented by Figure 1 wherein the

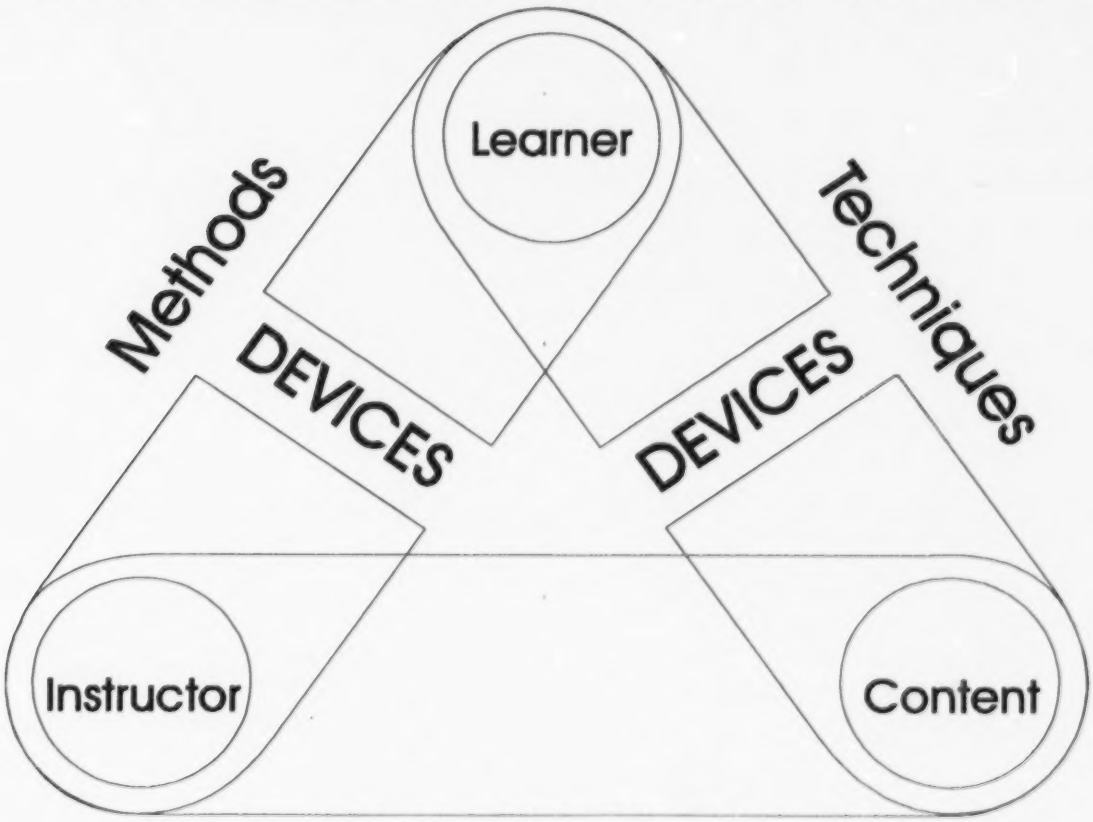

Figure 1. An Electronic Distance Education System

relationship of devices, methods, techniques, learners, content and instructors are portrayed in relationship to one another.

An evaluation framework

This conceptual framework can be used to develop a research or an evaluation framework for distance education. Such a framework allows researchers and evaluators to understand what area of distance education they are studying thus avoiding the problem of thinking about distance education as some amorphous mass which is treated similarly no matter what is being studied. The framework also can help direct investigators into methodological considerations as well as measurement

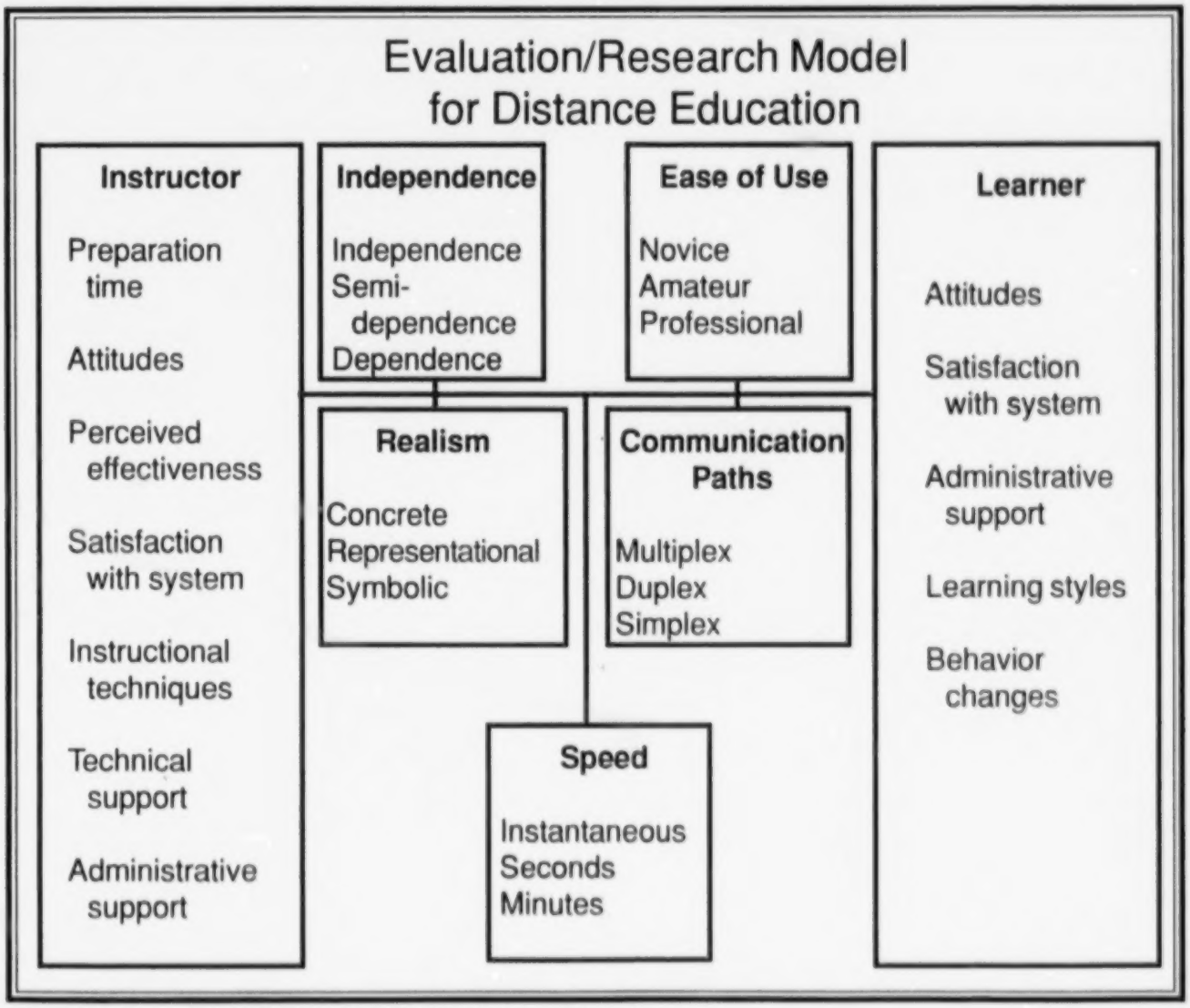

Figure 2. An evaluation/research model for distance education

concerns. The framework presented in Figure 2 is built upon the considerations described above.

This framework provides help in understanding how various parts of distance education may or may not relate to one another. For example, issues of satisfaction with the system, administrative support, personal learning styles, behavioral changes and the like can be studied from the learners' perspectives or within the contexts of methods, techniques, and devices. Learners can provide perspectives on the learning environment (both methods and techniques) that can guide instructor behavior.

The perspective of the instructors about various issues can provide information about preparation time, perceived effectiveness, satisfaction, use and perceptions of instructional techniques, techniques and administrative support. Methodological implications (in the research and evaluation sense) include measurement, observational, and interview approaches. Linking these two elements of distance education (instructor and learner perspectives) are the characteristics of devices used.

A number of studies have been conducted which are diverse in nature, but are grounded in the frameworks presented above. To demonstrate how the framework can help integrate the various findings, a brief description of different studies are produced

Various Studies in Distance Education		
Focus/Perspective	**Primary Method**	**Findings**
Course evaluation of DE classes/learner perspective	Survey/Quantitative	Distance Education instructors are rated similarly to face to face instructors.
Evaluation of audio course/ learner perspective	Site observations/Qualitative	Technology interfered with interactions. Parallel learning takes place.
The devises used in DE (Development of a technology rating instrument/expert opinion)	Telephone survey (Quantitative)	Communication, ease of use, realism, independence, and speed are ranked characteristics of DE devices

Various Studies in Distance Education		
Focus/Perspective	**Primary Method**	**Findings**
Study of participant motivations/learner perspective	Survey/Quantitative	DE student motivations are similar to face to face student motivations. Motivational orientations do not account for satisfaction differences.
A study of liberal arts courses at a distance/instructor perspective	Interviews, Content Analysis/ Qualitative	Learning time can be compressed with use of extended syllabi. Instructors have high regard for DE students.
Study of instructional motivation/learner perspective	Survey/Quantitative	DE students are motivated by similar instructional design elements as face to face students.

in the table below which shows the focus and perspectives of the study, the methods employed and one or two findings from the investigations.

The studies reviewed here provide a variety of findings which all have implications for distance education. The studies all have varying focuses and employ various research methods. A holistic perspective is provided by employing the conceptual analysis described at the beginning of the paper. It is evident which studies apply to devices. However, it is more difficult to differentiate method and techniques unless one knows the scope of the study. All of the studies here would be classified as dealing with distance education methods because they deal with wider concepts and issues beyond the learning techniques employed. Techniques investigation would be limited within a method (distance education, class, or individual methods) and look at the way people learn under specific learning techiques.

Parallel learning

Of the findings listed in the table above, one of the most interesting is the notion

of parallel learning. This finding has implications for instructional design (techniques), distance education administration (methods), and technology (devices). To better illustrate these implications a brief description of parallel learning is offered here.

Parallel learning describes that activity in which adult distant education students engage whenever we as instructors become boring or irrelevant (I know that happen only rarely, but it does happen). DE provides a setting where adults can and do talk to one another about what is being discussed without being rude to the teacher. And during these discussions they process information that is relevant to the topic at hand.

We have found from observing DE at remote sites that they do not sit passively awaiting instruction from all knowing experts. To the contrary we found adults

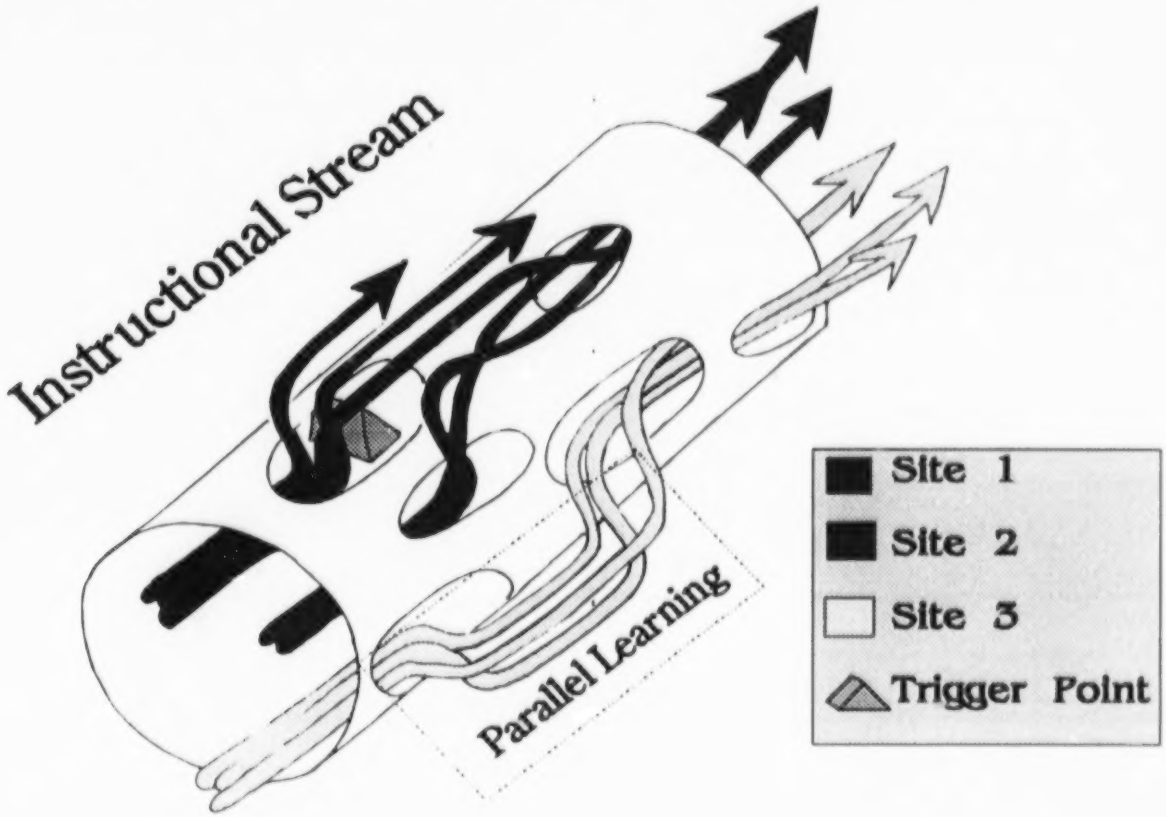

Figure 3. Instructional Stream

actually guessing what the expert was going to say next, or debating what had been said. They interacted with the instructor but they interacted more frequently and longer with fellow students at the local site. This interaction produced insights which paticipants indicated would change their practices.

Figure 3 illustrates what might be called the instructional stream which is largely under the direction of the instructor. However, there are events which encourage DE students to engage in the behavior of parrallel learning. There are other episodes which cannot be classified as parallel learning, which are actually non-parallel in nature.

The trigger events may be a distruption in the signal to the remote site, an especially boring lecture, unusally controversial statements by the instructor, irrelevant statements, etc. Less well documented are those events which return the learners to the instructional stream.

Implications

The implications for the instructional designer are to help teachers aviod unintended trigger events and to maximize their effect when appropriate (techniques). For the technology system manager implications have to do with the smooth running of a system (devices). And for the distance education adminstrator implications are for the socialization of learners to a distance education system (methods).

I am concerned that instructional development will in the future be concerned with message design, graphics, public speaking, and broadcast mannerisms and will neglect the part of information dismessination that turns it into education: interaction. When you think about it, satellite distance education is not much different from watching television. The only difference is that I'm much more comfortable watching TV in my home than a conference room.

Methods, techniques, and devices are all elements that interact much more that previous researchers and theorticians have suspected. We need to study that

interaction so as to better understand the dymanic enterprize called distance education.

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